

## CLAIMS

1. A method for making optical fiber, the method comprising the steps of:  
5 forming a glass core rod by soot deposition, the glass core rod having a core region surrounded by a cladding region;  
dehydrating the glass core rod;  
consolidating the glass core rod to form an optical fiber preform;  
drawing fiber from the optical fiber preform; and  
10 exposing the drawn optical fiber to an atmosphere containing deuterium at room temperature.
2. The method as recited in claim 1, wherein the exposing step further comprises one of exposing the drawn optical fiber to a deuterium atmosphere having a partial pressure of  
15 approximately 0.01 atmospheres of deuterium at room temperature for approximately 6 days, and exposing the drawn optical fiber to a deuterium atmosphere having a partial pressure of approximately 0.05 atmospheres of deuterium at room temperature for approximately 1.5 days.
- 20 3. The method as recited in claim 1, wherein the exposing step further comprises exposing the drawn optical fiber to a deuterium atmosphere in such a way that reduces the amount of Si defects in the fiber.
4. The method as recited in claim 1, further comprising the step of forming an  
25 overclad region around the glass core rod to form an overclad optical fiber preform, and wherein the drawing step further comprises drawing fiber from the overclad optical fiber preform.

5. The method as recited in claim 4, wherein the overclad region forming step further comprises the steps of:

depositing soot around the glass core rod;

dehydrating the deposited soot; and

5 consolidating the deposited soot around the glass core rod.

6. The method as recited in claim 5, wherein the soot deposition in the overclad region forming step is selected from the group consisting of vapor axial deposition (VAD) and outside vapor deposition (OVD).

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7. The method as recited in claim 4, wherein the overclad region forming step further comprises the steps of:

positioning an overclad tube around the glass core rod; and

heating the overclad tube along the length thereof in such a way that the overclad

15 tube collapses onto the glass core rod to form the overclad optical fiber preform.

8. The method as recited in claim 1, wherein the soot deposition in the glass core rod forming step is selected from the group consisting of vapor axial deposition (VAD) and outside vapor deposition (OVD).

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9. The method as recited in claim 1, wherein the optical fiber has a transmission loss at 1385 nanometers (nm) that is less than 0.33 dB/km and the aging loss increase thereafter is less than 0.04 dB/km.

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